"The Economy"

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General Obligation Refunding Bonds"
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Prepared by the Boston Redevelopment Authority
Policy Development and Research Department

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THE ECONOMY

General

The City is the economic hub of both the Commonwealth and the New England region. It is a center for professional, business, financial, higher educational and medical services, as well as transportation, communications, export, cultural and entertainment activities. As a government center, the City is the state capital and is host to several federal offices. High technology, research and development, manufacturing, and wholesale distribution also contribute to the economy of the City and its suburbs.

The City of Boston is the twentieth largest city in the United States and the center of the seventh largest Consolidated Metropolitan Statistical Area (CMSA) in the nation, consisting of the Boston Primary Metropolitan Statistical Area ("PMSA") plus the contiguous PMSAs of Lawrence, Haverhill, Salem/Gloucester, Brockton, and Nashua, New Hampshire. The Boston CMSA had a population of 4.2 million in 1990, as reported by the U.S. Department of Commerce, Bureau of the Census (the "Bureau of the Census"). In 1990, the City had a population of 574,283, as reported by the Bureau of the Census, and had 610,126 jobs as reported by the U.S. Bureau of Economic Analysis from data of the Massachusetts Department of Employment and Training. The ratio of jobs to population indicates that the City provides a direct source of employment and income for an area which extends well beyond its borders. Measured in terms of jobs, the City's economy comprises approximately 16 percent of the Massachusetts economy and 7 percent of that of the six New England states.

In 1982 the City began a six year period of growth during which its economy exceeded many measures of economic growth nationwide. Beginning in 1989 the City, along with the Boston metropolitan area and the New England region, experienced an economic decline which was followed in 1990 by a national economic downturn.

Recent economic data show evidence of improvement. For example, Massachusetts employment, which had declined by 303,000 jobs in the three years 1988-1991, is now declining at a lesser rate. Data from the

Bureau of Labor Statistics for the twelve months through December 1992 showed a decline of only 45,500 jobs compared with a decline of 125,000 jobs for the previous twelve-month period, and monthly gains in employment were evident in September and October 1992. Also, unemployment rates, which peaked during the second quarter of 1991 in the Commonwealth at 10.3%, in the Boston metropolitan area at 8.4% and in the City at 9.3% all declined to levels between 7 and 8 percent in the Commonwealth, the Boston metropolitan area and the City by December 1992. Finally, residential sales improved markedly in 1991, and have made further progress in 1992, as described more fully in "Housing Stock, Housing Values, and the Linkage Program", below. The rise in residential sales is most likely due to lower interest rates and prices.

Statistical Data

Statistical data relating to population, employment and income are derived primarily from four separate sources: the U.S. Census Bureau, the U.S. Bureau of Labor Statistics, the U.S. Bureau of Economic Analysis, and the City of Boston/Boston Redevelopment Authority, each of which is described below.

The U.S. Census Bureau publishes information about population, housing and the economy. Data from the 1990 Decennial Census of Population and Housing is now available for the City. In addition, some monthly and quarterly data are available through third quarter 1992 on certain topics for the region, Massachusetts, and the Boston metropolitan area. The U.S. Census Bureau does not publish such interim data for the City.

The U.S. Bureau of Labor Statistics publishes data and reports about the workforce and related subjects including unemployment rates, area wages, and cost-of-living adjustments. Final data for 1991 are the most recent annual data available; the most recent monthly data are for October, 1992.

The U.S. Bureau of Economic Analysis publishes quarterly and annual statistics on income and employment. The most recent annual figures are from the April and September, 1992 revised series for the nation, Massachusetts, Metropolitan Counties and Suffolk County, which consists of the City plus the municipalities of Revere, Chelsea and Winthrop; the City comprises approximately 87% of the County's population and approximately 96% of its employment.

The City of Boston and the Boston Redevelopment Authority ("BRA") prepare reports and compile data on the population and economy of the City and its neighborhoods. BRA also provides data and trends from various local, regional, state and national sources on such topics as employment and occupation, large employers, city schools, universities and colleges, medical institutions, tourism and lodging, transportation, office and industrial markets, housing, building activity and urban redevelopment and infrastructure projects.

Statistical data do not necessarily reflect current activity because of delays resulting from the time required to collect, tabulate and publish such data. While the City believes that it has used the most recent data readily available to it in the discussion in this section, because of such necessary delays, the data contained herein may not reflect current conditions or trends. Additionally, statistical data are approximations and generalizations subject to various sources of error inherent in the statistical process, and may be revised on the basis of more complete data. Within such limits, the statistical data contained herein describe past activity and are not presented with a view to predicting future economic activity either in particular categories or in general.

New England, Massachusetts and Metropolitan Boston Economics

New England comprises a six-state region which has a combined population of 13.2 million persons and over 7.6 million jobs according to 1992 Bureau of Economic Analysis data. For most of the 1980s, the rate of growth in total personal income, per capita income and population for New England was higher than the national average. Beginning in 1989, this trend reversed as the New England economy began to slow down. While total personal income in New England grew at an annual average compound rate of 7.4% over the period from 1982 through 1991, exceeding the 6.7% national rate, in the most recent period for which data

Bureau of Labor Statistics for the twelve months through December 1992 showed a decline of only 45,300 jobs compared with a decline of 137,000 jobs for the previous twelve-month period, and monthly gains in employment were evident in September and October 1992. Also, unemployment rates, which peaked during the second quarter of 1991 in the Commonwealth at 10.3%, in the Boston metropolitan area at 8.4%, and in the City at 9.2%, all declined to levels between 7 and 8 percent in the Commonwealth, the Boston metropolitan area and the City in December 1992. Finally, residential sales improved modestly in 1991, and have made further progress in 1992, as described more fully in "Housing Stock, Housing Values, and the Linkage Program", below. The rise in residential sales is most likely due to lower interest rates and prices.

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is available, from third quarter 1991 through third quarter 1992, personal income in New England grew at a rate of only 3.9%, trailing the 4.5% national rate. Employment in New England, which grew by 1,487,000 jobs from 1982 through 1988 at a rate of 3.4% annually, declined by 522,000 jobs from 1989 through 1991, resulting in a net gain of 965,000 jobs over the nine-year period.

The Massachusetts economy, with 6.0 million people and 3.5 million jobs, has slowed and even contracted in some respects since 1988. Total personal income grew at a 7.2% annual average rate from 1982 through 1991; by contrast, from third quarter 1991 through third quarter 1992, it grew by 3.8% which is below the 4.5% national average. Massachusetts gained nearly 667,000 jobs in the six-year period of 1982-1988, an average annual growth rate of 3.3%. It lost 303,000 jobs between 1989 and 1991 as mini-computer, defense and financial firms consolidated. The Commonwealth therefore had a net gain of 364,000 jobs during the period from 1982 through 1991. The most recent data from the U.S. Bureau of Labor Statistics showed a loss of about 45,500 jobs for the twelve months ending December 1992.

The Boston metropolitan area, which has 3.8 million people and 2.4 million jobs, has shown economic trends similar to those for the Commonwealth. The rate of growth of total personal income, at 8.1% annually from 1982-1990, was above the 7.1% national rate. 1991 and 1992 data are not yet available. However, the growth of 464,000 jobs from 1982 through 1988 was offset by the loss of 244,000 jobs from 1989 through 1991 for a net gain of 220,000 jobs. The most recent data from the U.S. Bureau of Labor Statistics showed a loss of about 28,300 jobs for the twelve months ending December 1992. These trends are illustrated by the following chart; employment data for the City are set forth under "Employment Structure, Employment Trends and Occupational Changes" and its accompanying table.

Population, Income and Employment
1982-1991
(income in current year dollars)

	1982	1987	1988	1989	1990	1991
United States						
Total Personal Income ($000)	$2,684,308,000	$3,790,116,000	$4,063,785,000	$4,368,495,000	$4,649,706,000	$4,814,495,000
Per Capita Income ($)	11,587	15,641	16,618	17,699	18,639	19,092
Population (000)	231,669	242,321	244,534	246,820	249,466	252,177
Employment (000)	114,156	130,000	134,068	136,420	138,596	137,071
New England						
Total Personal Income ($000)	$157,142,640	$241,290,039	$263,888,332	$281,470,258	$292,835,526	$298,641,565
Per Capita Income ($)	12,604	18,628	20,165	21,353	22,148	22,629
Population (000)	12,468	12,953	13,086	13,182	13,222	13,197
Employment (000)	6,660	7,922	8,147	8,103	7,937	7,625
Massachusetts						
Total Personal Income ($000)	$73,633,657	$112,806,879	$123,424,910	$131,201,579	$135,566,370	$137,924,265
Per Capita Income ($)	12,759	19,004	20,637	21,811	22,520	23,003
Population (000)	5,771	5,936	5,981	6,016	6,020	5,996
Employment (000)	3,139	3,716	3,816	3,773	3,671	3,513
Metropolitan Boston (1)						
Total Personal Income ($000)	$49,481,354	$75,784,340	$83,483,452	$89,097,459	$92,018,638	N/A
Per Capita Income ($)	13,451	20,158	22,135	23,524	24,315	N/A
Population (000)	3,679	3,760	3,772	3,788	3,785	N/A
Employment (000)	2,134	2,543	2,598	2,578	2,503	$2,354

(1) This metropolitan area, the New England Counties Metropolitan Area ("NECMA"), is somewhat larger than the CMSA. It includes five full counties in Massachusetts: Essex, Middlesex, Norfolk, Plymouth and Suffolk.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, April 1992 and September 1992.

Employment Structure, Employment Trends and Occupational Changes

Between 1982 and 1991, City employment continued to shift from traditional labor intensive manufacturing jobs to technology and service jobs, as shown in the table, "City of Boston Employment, 1982-1991," included in this section. Over the past nine years, the City's service industries, including transportation, communication, public utilities, finance, insurance and business and professional services, expanded their share of the City's total employment from 58% in 1982 to 62% in 1991, while the total employment in manufacturing and trade declined from 9% to 5% and from 15% to 13%, respectively. The economy of the Boston metropolitan area primarily rests on high technology, finance, professional and business services, defense, and educational and medical institutions. The City's economy is more specialized in the financial, business and professional services and educational and medical sectors than the suburban economy, which is more specialized in high technology and the defense industry. As used in this section, "business and professional services" includes many professions, such as law, accounting, engineering, advertising, and architecture, as well as business and miscellaneous services, i.e. data processing, bookkeeping, and building services.

Total employment in the City increased by 1,214 between 1982 and 1991, as the growth of 69,241 jobs from 1982 through 1988 was offset by the loss of 68,027 jobs from 1988 through 1991. From the first quarter of 1991 through the first quarter of 1992, employment data shows an annualized loss of 2.7%, or 15,000 jobs. The three-year loss of jobs is most evident in construction, wholesale and retail trade, transportation, communications, utilities, real estate and business and professional services, while gains are most evident for this period in the health care and securities industries.

City of Boston Employment, 1982-1991 Selected Years by Industry

Industry	1982	1985	1986	1987	1988	1989	1990	1991
Fishing/Mining/Agriculture	1,092	1,231	1,236	1,256	1,338	1,265	1,180	1,098
Construction	12,253	13,648	14,603	15,686	15,910	15,295	13,060	10,396
Manufacturing	50,292	42,800	39,639	37,612	34,738	33,225	32,090	29,953
Transportation/Communication/Utilities	37,762	37,831	36,308	36,546	37,565	35,631	36,157	33,372
Wholesale Trade	26,318	25,474	26,259	25,649	23,401	22,131	19,456	16,771
Retail Trade	58,964	64,449	64,814	63,497	62,306	62,802	61,058	55,906
Finance/Insurance/Real Estate	79,327	86,260	90,103	95,252	95,304	88,739	85,530	81,752
Banking	23,205	26,336	27,883	27,349	27,538	25,805	22,506	20,129
Securities	9,464	12,132	14,456	18,714	19,404	19,908	21,119	22,160
Insurance	35,479	34,206	33,310	32,467	30,943	29,221	28,757	27,361
Real Estate and Other	11,179	13,586	14,454	16,723	17,421	13,805	13,149	12,102
Services	211,804	238,403	245,648	250,589	257,736	258,836	255,229	240,594
Hotel	7,838	10,816	10,904	11,705	12,183	13,044	13,101	11,811
Health	65,999	69,515	70,975	71,733	73,816	75,153	76,626	79,131
Educational	26,594	29,235	29,352	29,255	30,023	30,238	30,636	27,719
Cultural	5,802	6,622	7,654	7,673	9,309	10,658	9,412	8,229
Social and Nonprofit	20,071	21,608	22,002	21,285	22,476	22,793	23,240	21,489
Business and Professional	74,583	87,722	91,860	96,261	97,241	94,416	90,619	82,083
Personal and Repair	10,918	12,885	12,901	12,675	12,688	12,534	11,410	10,131
Government	89,210	96,889	100,170	104,559	107,963	106,480	106,554	98,396
Total	567,022	606,985	618,780	630,646	636,263	624,403	610,314	568,236

Source: 1982-1990 figures are mathematically derived from U.S. Bureau of Economic Analysis Series for Suffolk County ("BEA Series") (September 1992 revised series) pro-rated to Boston geography. 1991 data are based on Massachusetts Department of Employment and Training Boston employment data adjusted to BEA equivalent series. Because of pro-rating factors used, minor discrepancies of 1 to 3 between totals and employment categories may result.

The Boston metropolitan area comprises about two-thirds of the Massachusetts state economy, which is interrelated with the economies of the other New England states. Consequently, the City's job losses since

the peak of 1988 should be viewed in the context of regional job loss. The following table charts jobs lost in the region for 1988 through 1991. 1991 Boston data is preliminary.

Job Losses in the New England Region, 1988-1991

Area	1988-89	1989-90	1990-91	1988-91 Total	1988-91 Percent
New England	−44,049	−166,018	−312,229	−522,296	− 6.4%
Massachusetts	−42,715	−102,251	−157,960	−302,926	− 7.9
Greater Boston	−20,410	− 74,792	−149,034	−244,236	− 9.4
Boston	−11,860	− 14,089	− 42,078	− 68,027	−10.7

Source: U.S. Bureau of Economic Analysis for 1989, 1990 and 1991 (April and September 1992 series). Boston data derived from BEA Series and DET employment data as described under "City of Boston Employment, 1982-91 Selected Years by Industry." All percentages based on loss since 1988.

As of 1990, 66% of City residents were white-collar workers, 17% were service workers and 16% were blue-collar workers, as compared to 60% white-collar workers, 18% service workers and 22% blue-collar workers in 1980. As the table below, "Occupational Change in the City's Resident Labor Force," shows, this trend among City residents away from blue-collar occupations and toward white-collar and service occupations has continued since 1960. Job losses from 1990 to 1992, as reflected in occupational employment data for the Boston metropolitan area by the Massachusetts Department of Employment and Training, show about equal losses for white-collar and blue-collar employees.

Occupational Change in the City's Resident Labor Force

	1960		1970		1980		1990	
	Number	%	Number	%	Number	%	Number	%
White-Collar	126,471	44%	146,657	55%	154,456	60%	191,251	67%
Professional & Technical	33,476	12	44,894	17	51,979	20	65,251	23
Managerial	15,604	5	15,035	6	25,238	10	41,955	15
Clerical & Administrative	58,990	21	71,655	27	58,451	23	56,950	20
Sales	18,401	6	15,073	6	18,788	7	27,095	9
Blue-Collar	96,576	34	75,160	28	54,452	22	47,498	16
Craftsmen	32,398	11	27,157	10	19,772	8	18,453	6
Operatives	52,175	18	36,695	14	24,825	10	19,971	7
Laborers & Farm	12,003	4	11,308	4	9,855	4	9,074	3
Service	38,034	13	44,688	17	47,109	18	49,955	17
Not Reported	27,115	9	—	—	—	—	—	—
Total	288,196	100%	266,505	100%	256,017	100%	288,704	100%

Source: U.S. Department of Commerce, Bureau of the Census for 1960, 1970, 1980 and 1990. Percentages may not add due to rounding.

Unemployment

Unemployment in the City increased from a low of 3.2% in 1987 to 8.5% in 1991. The City's average annual unemployment rate remained below the national rate through 1989 and equalled the national rate in 1990. Unemployment rates for Massachusetts and the New England region exceeded the national average in 1990 for the first time in more than a decade. December, 1992 data show that the City's unemployment rate of 7.1% was higher than the national average of 7.0% but below the Massachusetts rate of 7.9%. As the

following table illustrates, 1992 monthly unemployment data show a general improvement over 1991 results. As of December, 1992, 21,345 Boston residents were unemployed. The 1990 Census data for Boston, which differ from the Bureau of Labor Statistics rates shown below due to sample size, showed that when Boston's total unemployment rate was 8.3%, the rate for whites was 6.4%, the rate for all minority groups combined was 12.6%, and the rate for all youth aged 16-19 years was 18.9%. This pattern is typical of that shown by many of the nation's urban centers.

Annual Unemployment Rates

	1970	1975	1980	1982	1986	1987	1988	1989	1990	1991	1992
City	4.9%	12.8%	6.1%	9.1%	4.4%	3.2%	3.3%	3.9%	5.5%	8.5%	N/A
Boston PMSA(1)	4.0	10.5	5.0	6.7	3.3	2.7	2.8	3.4	5.1	7.8	N/A
Massachusetts	4.6	11.2	5.6	7.9	3.8	3.2	3.3	4.0	6.0	9.0	8.5%
New England	4.9	10.9	5.9	7.8	3.9	3.3	3.1	3.9	5.7	8.0	N/A
United States	4.9	8.5	7.1	9.7	7.0	6.2	5.5	5.3	5.5	6.7	7.4

(1) Primary Metropolitan Statistical Area, consisting of the City, and 105 contiguous municipalities, with a population of approximately 2.8 million in 1990 according to U.S. Census data.

Sources: U.S. Bureau of Labor Statistics for United States, New England and Massachusetts and Massachusetts Department of Employment and Training for the City and PMSA.

Unemployment Rates for Boston, Metropolitan Boston, Massachusetts, New England and the United States for 1991 and 1992(1)

	Boston		Metropolitan Boston		Massachusetts		New England		United States	
	1991	1992	1991	1992	1991	1992	1991	1992	1991	1992
Jan.	7.9	7.2	7.5	7.1	9.0	8.4	8.0	8.2	7.0	8.0
Feb.	8.7	7.1	8.2	7.1	9.9	8.5	8.6	8.5	7.2	8.1
Mar.	9.2	8.4	8.6	8.5	10.3	10.0	8.7	8.7	7.1	7.7
Apr.	7.6	7.6	7.2	7.5	8.3	8.6	7.6	8.2	6.5	7.1
May	8.9	7.5	8.1	7.2	9.2	8.2	8.0	7.4	6.6	7.2
Jun.	9.3	8.5	8.4	8.2	9.5	9.0	8.2	8.2	6.9	7.8
Jul.	9.2	8.4	8.2	7.8	9.4	8.7	8.3	7.8	6.7	7.6
Aug.	9.0	7.8	7.9	7.3	8.8	8.0	8.0	7.6	6.5	7.3
Sep.	9.1	8.1	8.0	7.6	8.9	8.4	7.9	7.7	6.4	7.2
Oct.	8.2	7.3	7.3	6.8	8.2	7.6	7.3	7.0	6.4	6.8
Nov.	7.6	7.6	6.9	7.2	8.0	8.3	7.4	8.0	6.6	7.0
Dec.	7.2	7.1	6.7	6.7	7.9	7.9	7.5	7.8	6.8	7.0

(1) Unemployment rates are not seasonally adjusted.

Large Employers

The following table lists the ten largest private employers in Boston, which had an aggregate of approximately 65,000 employees in 1991:

Largest Private Employers in Boston, 1991
(listed alphabetically)

Bank of Boston Corporation
Blue Cross & Blue Shield of Massachusetts
Boston University
Brigham & Women's Hospital, Inc.
Children's Hospital Corp.
FMR Corp. (Fidelity Investments)
General Hospital Corp. (Massachusetts General Hospital)
The Gillette Company
John Hancock Mutual Life Insurance
New England Medical Center Hospitals

Source: Economic Development and Industrial Corp. of Boston, 1993, based in part on data from Dun and Bradstreet.

In addition, the public sector has large numbers of employees in the City. According to the Department of Employment and Training, there were over 98,000 government workers in the City in 1991, a reduction of 8,158 from 1990 levels. Certain state government offices, federal regional offices, U.S. Postal Service facilities and state-chartered authorities and commissions and the City's local government are all located within the City. Preliminary data from the Department of Employment and Training indicate that during 1992, approximately 4,700 government jobs were eliminated in the City, including approximately 700 Federal, 2,600 state and 1,400 City jobs.

Labor Force and Education

According to U.S. Department of Commerce, Bureau of the Census, the City's resident labor force declined during the 1970s but increased during the 1980s. In contrast to the 12% decline in population between 1970 and 1980, the City's labor force (those residents aged 16 and over, available to work) declined by only 4%. The difference in these rates of decline was attributable to the fact that the decline in population was concentrated in the under-16 age group. Since 1980, both the increasing population and its increasing age have combined with the rising labor force participation of women, minorities, youth, and the elderly to produce a larger labor force. By 1990, the City's population had increased by 2% over 1980 levels, while the City's labor force increased by 12.8% in the same period, according to data from the U.S. Bureau of the Census.

General improvement in educational attainment of residents aged 25 and over continued throughout the 1970-1990 period. The percentage of this population that had completed four or more years of college tripled during this period from 10.4% to 30%. This change, in part, reflected the trend for an increasing percentage of graduates of the City school system to seek higher eduction. This percentage increased from 25% in 1960 to 36% in 1970, 44% in 1977, 54% in 1982 and 66% in 1990, and declined to 62% in 1992, based upon Boston School Department figures. Improving educational attainment levels and shifting occupational patterns suggest a concurrent transformation of the City's work force as the City's economy has moved to a service-dominated base.

The problem of high school dropouts continues for City public schools, but some improvement is noted. Based on Boston School Department figures, 32.7% of the students who entered high school in the fall of 1986 had not graduated by the end of the 1990 school year, as compared to the 39.7% of the students entering in the fall of 1982 who had not graduated by the end of the 1986 school year.

The City supports entry-level and advanced job training programs, including the following: English-as-a-Second Language training, pre-vocational and vocational training, adult literacy training, and support counseling. In addition, linkage contributions paid into the Neighborhood Jobs Trust provide a supplemental source of funding for job training programs. For a full discussion of the City's linkage program see "Housing Stock, Housing Values, and the Linkage Program."

Years of School Completed for Boston Residents Age 25 and Over, 1970-1990

	1970		1980		1990	
	Persons	Percent	Persons	Percent	Persons	Percent
0-8 years	91,582	26.1%	54,932	16.6%	37,824	10.3%
1-3 years of high school	71,511	20.4	49,407	14.9	51,051	14.0
High school graduate	120,350	34.3	115,787	35.0	97,233	26.6
1-3 years college	30,876	8.8	43,451	13.2	69,889	19.1
4 or more years of college	36,245	10.4	67,073	20.3	109,711	30.0
Total	350,564	100.0	330,650	100.0	365,708	100.0

Source: U.S. Department of Commerce, Bureau of the Census; 1970, 1980 and 1990.

Income, Wages, and Cost of Living

Per capita personal income for Suffolk County was $23,150 in 1990, 24.2% above national per capita personal income of $18,639, according to the U.S. Bureau of Economic Analysis. An historical summary of per capita income shows that, from 1980 to 1990, the City's per capita income grew at a rate greater than that for the nation, in contrast to the 1970-1980 period when it rose at a slower rate. While the City's per capita income grew at a faster rate than the per capita income growth rates for New England, Massachusetts and Metropolitan Boston (as defined in the chart below) between 1982 and 1990, the City's per capita income remains below the per capita income for Metropolitan Boston. The City's median household income (in current year dollars), based on U.S. Census data, rose from $7,835 in 1970, to $12,530 in 1980 and $29,180 in 1990. The figures in this paragraph and the chart directly below reflect earned income of persons residing in the named areas plus rents, interest and other unearned income and transfer payments from governmental entities. As such, these figures take into account certain income sources not included in the survey of average annual wages in the following paragraph, which reflects earned income of persons who work (but do not necessarily reside) in the named areas.

Per Capita Personal Income Comparison, 1970-1991
(in current year dollars not adjusted for inflation)

	United States	New England	Massachusetts	Metro Boston(1)	Suffolk County(2)
1970	$4,047	$4,445	$4,514	$ 4,782	$ 4,691
1980	9,942	10,579	10,655	11,133	10,359
1982	11,587	12,604	12,759	13,451	12,170
1985	14,159	16,067	16,353	17,272	15,618
1986	14,910	17,307	17,669	18,542	16,725
1987	15,641	18,628	19,004	20,158	18,204
1988	16,618	20,165	20,637	22,135	20,221
1989	17,699	21,353	21,811	23,524	21,725
1990	18,639	22,148	22,520	24,315	23,150
1991	19,092	22,629	23,003	N/A	N/A

(1) Metropolitan Boston denotes the New England County Metropolitan Area (NECMA), which is larger than the Primary Metropolitan Statistical Area (PMSA).

(2) City residents constitute approximately 87% of Suffolk County's population.

Source: U.S. Dept. of Commerce, Bureau of Economic Analysis, April 1991 and September 1992 Revised Series.

The December, 1991 report from the U.S. Bureau of Economic Analysis indicates that average annual wages earned, by place of work, have been consistently higher in Suffolk County than in the Boston metropolitan area and the Commonwealth. Except for manufacturing and wholesale trade, wages in Suffolk County were higher for all major industry types. For all industries combined, Suffolk County's average wage level ($30,922) was 11.5% greater than that in the Boston metropolitan area ($27,745) and 19.2% greater than the average state wage level ($25,944). The average annual wage level reflects income earned by an individual from work in a particular industry.

During the ten years 1981-1991, based on the U.S. Bureau of Labor Statistics Consumer Price Index, the cost of living index rose at an annual average rate of 4.7% in the Boston metropolitan area, while the national index increased at a 4.1% annual rate. From November 1991 to November 1992, the cost of living in the Boston metropolitan area rose 2.5%, compared to 3.1% for the nation.

Population

The U.S. Census reported the City's population as 574,283 in 1990, a 2% increase over 1980 and the first increase since the 1940s. The number of households in the City increased from 217,622 in 1970, to

218,457 in 1980, and to 228,464 in 1990, while household size fell from 2.8 to 2.4 persons per household from 1970 to 1990. The Census Bureau population estimate for Massachusetts on July 1, 1991 was 5,996,000 or a reduction of 20,000 persons (−0.3%) from the 1990 census. The only recent local Census Bureau estimate is for Suffolk County as of July 1, 1991, which showed a decline of 2% since April, 1990, from 663,906 to 650,601.

Population of the Commonwealth and Boston Metropolitan Area 1970, 1980, and 1990

	1970	1980	1990	Change 1970-1980	Percent Change 1970-1980	Change 1980-1990	Percent Change 1980-1990
Massachusetts	5,689,170	5,737,037	6,016,425	47,867	0.8%	279,388	4.9%
Metropolitan Boston ...	2,899,101	2,763,257	2,794,280(1)	−135,744	−4.7%	31,023(1)	1.1%(1)
City of Boston	641,071	562,994	574,283	−78,077	−12.2%	11,289	2.0%

(1) Because of a metropolitan area boundary change from Standard Metropolitan Statistical Area ("SMSA") to PMSA, the 1980-1990 change is based on a PMSA population of 2,805,911 in 1980. The 1970-1980 change is based on the SMSA, a slightly smaller geographic area than the PMSA, comprising 92 cities and towns.

Source: U.S. Department of Commerce Bureau of the Census.

Medical and Higher Educational Institutions

The City's medical and educational institutions are an important component of its economy, providing employment opportunities for residents of the City and the Boston metropolitan area. Expenditures by the institutions' patients, students and visitors are important to the City's trade and service sectors.

Thirty-one in-patient hospitals are located within the City, including Massachusetts General Hospital, Brigham and Women's Hospital, Beth Israel Hospital, Children's Hospital, New England Deaconess Hospital, the New England Medical Center and Boston City Hospital. For further information on Boston City Hospital, see "Sources of City Revenue—Departmental Revenues—Department of Health and Hospitals" and "City Indebtedness—Boston City Hospital", below. The City is also the home of the medical and dental schools of Harvard, Tufts and Boston Universities, and of twenty-five public neighborhood health clinics, not including health maintenance organizations and membership clinics.

In 1990, there were an estimated 76,524 persons employed in health services in the City, based on U.S. Bureau of Economic Analysis data. Health services represent 1 out of every 8 jobs within the City. Growth in the health services sector has been stable, despite varying economic conditions. Data from the U.S. Census Bureau, County Business Patterns, showed that the number of hospital employees in Suffolk County between 1987 and 1990 grew from 47,154 to 55,610.

The City's hospital and medical school community invested $750 million in new facilities since 1984, and in the 1990s is expected to spend an additional $980 million on upgrading clinical facilities. Large new projects are currently under construction at the following City hospitals: Massachusetts General Hospital, Beth Israel Hospital, New England Deaconess Hospital, Boston City Hospital and New England Medical Center.

The City is the nation's largest center for health research. The medical research institutions within the City received $547 million in National Institutes of Health awards in fiscal 1992, considerably more than any other city. This was a 5% increase (after adjusting for inflation) from fiscal year 1991. According to the National Institute of Health Division of Research Grants, six of the seven independent hospitals in the nation which received the most National Institutes of Health research funding in 1991 are located in the City.

Privately-funded research in the City includes a $100 million, ten-year agreement between Dana Farber Cancer Institute and Sandoz Pharmaceutical Ltd., and four agreements between Massachusetts General Hospital and various chemical, drug and cosmetic companies that will fund $33 million of research during 1992 alone. According to a 1991 BRA report, in 1990 the City's medical research institutions occupied nearly 2.7 million square feet of research space, and there was a demand for an additional 2.6 million square feet; approximately 707,000 square feet of new research space were occupied in 1991 and 1992.

In addition to these public and not-for-profit research facilities, over 100 biotechnology firms are located in the Boston metropolitan area. According to a 1990 Ernst & Young study, "Biotech 91: A Changing Environment," the Boston metropolitan area is the nation's second largest center for biotechnology by total revenue, and third largest by number of firms. Massachusetts biotech firms raised an estimated $1 billion in private capital during 1991, more than in the entire previous decade.

As of 1991, the New England Board of Higher Education reported 68 colleges and universities in the Boston metropolitan area, at which approximately 240,000 students were enrolled. The City's 29 universities, colleges, and community colleges had a combined enrollment in fall 1991 of approximately 105,000, a slight decline from fall of 1990. In addition, some graduate schools of Harvard and Tufts Universities, whose principal campuses are in Cambridge and Medford, respectively, had nearly 4,000 students in the City in 1991. Based on total graduate and undergraduate enrollment, Northeastern University is the largest university in Boston, with 28,882 students in 1991.

Educational institutions are a source of new highly skilled professionals for the City's labor force. For example, according to the Massachusetts Institute of Technology, although only 10% of its enrollees over the decade of the 1980s were from the Boston area, 24% remained in the area after graduation.

Educational institutional projects planned in the City for 1992 and 1993 will account for approximately $240 million of investment, according to the BRA. These include new construction at Boston University, Northeastern University, Tufts University, Boston College, the Massachusetts College of Pharmacy and Harvard University.

Tourism

According to the Greater Boston Convention and Visitors Bureau, an estimate of 8.2 million people visited the Boston metropolitan area in 1991, a decline of 6.8% from the peak of approximately 8.8 million visitors in 1988. These visitors, measured as tourists, business travelers and convention and meeting delegates who travelled at least 100 miles to get to the City, had an estimated total economic impact upon the Boston metropolitan area of $6.4 billion in hotel accommodations, meals, entertainment, shopping, transportation, and other services during 1988. According to preliminary estimates, the City had approximately 8.7 million visitors in 1992.

A growing number of visitors to the City are visitors to conventions, trade shows, and exhibits. In 1991, approximately 1.05 million persons are estimated to have attended such functions in the City, an increase of 5% from 1988. According to national figures from a 1990 survey by "Business Travel News," the City ranked as the 21st largest convention city in the nation in 1989 with 525,000 convention delegates. Trade and gate show visitors and meeting attendees accounted for the other 475,000. The John B. Hynes Veterans Memorial Convention Center, the World Trade Center and the Bayside Exposition Center have a combined capacity of over one million people per year, assuming use at full capacity on a daily basis.

The City provides a venue for concerts, ice shows, circuses, plays, and other entertainment and sports events. The City is home to three major league sports franchises: the Boston Red Sox baseball team, the Boston Bruins hockey team and the Boston Celtics basketball team. There is a proposal for a new privately financed, multipurpose arena in Boston's North Station District to be built by the New Boston Garden Corporation, a subsidiary of Delaware North, owner of the existing Boston Garden/North Station.

Hotel Market

From 1980 through 1989, fourteen hotel projects, including eleven new hotels and three additions to existing hotels, added 4,885 new rooms to the City's hotel stock. The number of hotel rooms in the City has risen from 6,907 in 1980 to 11,792 by 1991, an increase of 71%. From 1980 through 1988 annual occupancy rates were in the range of 68% to 76% even as many new rooms were completed and average room rates continued to rise. The occupancy rate peaked at 74.5% in 1988 and then declined slowly to a rate of 68.3% in 1991. This rate for 1991, however, compared favorably to the 65% national rate. According to Hospitality Valuation Services, a trade association, a hotel occupancy rate of 65% is generally considered to be profitable in the lodging industry.

Currently the only hotel under construction in the City is the 270 room Hyatt Hotel and Conference Center at Logan International Airport, scheduled to open in late 1993. Several other new hotels have been proposed, but since required approvals have not been obtained no completions would occur before 1994.

Transportation

The City is a major national and international air terminus, a seaport and the center of the New England's rail, truck, and bus service. The City is served by three limited-access interstate highways which connect it to the national highway system: U.S. 90 (the "Massachusetts Turnpike"), which leads westward from downtown Boston to the New York State border; U.S. 95, the East Coast's principal north-south highway, which connects Boston to Portland, Maine to the north and New York City and Washington, D.C. to the south; and U.S. 93, another north-south highway, that extends from just south of the City to New Hampshire and Maine. The City is also served by four railroads: Amtrak, Guilford, Conrail and Bay Colony.

Transportation planning includes both major highway and mass transit programs. Federal transportation legislation has enabled the Massachusetts Bay Transportation Authority (MBTA), which provides commuter rail, subway, local bus, and express bus services to 78 cities and towns in eastern Massachusetts, to receive approximately $3.7 billion between 1965 and 1992. Transportation planning for mass transit facilities in the City is mainly under the auspices of the MBTA. The MBTA's current capital program includes a variety of expansion and rehabilitation projects.

Other MBTA capital funds will go toward the ongoing improvement, renewal, and modernization of equipment, facilities, service utilities, tunnels and bridges. MBTA capital program projects are funded through the federal government and MBTA bonds and certificates of participation. For a discussion of the City's obligation with respect to the MBTA, see "City Indebtedness-Indirect Debt."

Work is underway on the MBTA's North Station Transportation Center Project, which includes construction of an underground parking garage, a new commuter rail terminal and a new subway station, as well as the relocation of the existing subway/light rail line. The MBTA's South Station Transportation Center project continues with the construction of an intercity bus terminal and parking garage above the existing rail terminal. The MBTA is planning to restore commuter rail service on the Old Colony Rail Line, which will provide commuter rail service to several of Boston's South Shore suburbs. About 70 percent of the cost of this project is funded by the federal government. State monies and bond funds will pay for the remaining share. Construction of a portion of this project, involving two rail spurs, is anticipated to begin in early 1993 and be completed by 1996. The MBTA is still seeking necessary approvals and appropriations for a third rail spur on this line.

The Environmental Impact Report for the South Boston Piers Transitway/Light Rail Project, a $278 million long range plan to connect South Station with the proposed new Federal Courthouse at Fan Pier and the World Trade Center, is in the comment stage. Congress has authorized funds to study the feasibility of this project in the Intermodal Surface Transportation Efficiency Act of 1992.

Amtrak intends to spend $220 million in 1993 to increase the speed of rail service between Boston and New York City, and expects to complete electrification of the Boston to New Haven, Connecticut corridor by 1997. Amtrak is currently experimenting with Swedish tilt train technology, which, when combined with

electrification, could drop the rail travel time from Boston to New York City to under three hours. No commitments have been made to fund the provision of one or more tilt trains beyond the experimental period. Amtrak is also developing a prototype for magnetic levitation high speed rail service. Amtrak plans to spend a total of $1.2 billion on these and other modernization projects around the nation.

The federal "Intermodal Surface Transportation Infrastructure Act of 1991" authorized several of these projects described above; specifically the South Boston Piers Transit planning and Amtrak electrification.

See "Large Public Sector Projects" for a description of the depression of the Central Artery and the construction of a third tunnel under Boston Harbor, two other significant transportation projects in the City.

Seaport and Airport

The Massachusetts Port Authority ("Massport") was created by the state legislature in 1959 to stimulate and support the Commonwealth's economy through development and management of the City's major air and sea transportation centers and the Tobin Memorial Bridge over the Mystic River. Massport is financially independent, and the City is not responsible for any debt or other obligations incurred by Massport. Heavy use of Boston Logan International Airport ("Logan Airport") and the Port of Boston has compelled significant expansion of both facilities. Massport spent a total of $513.7 million consisting of $262.2 million on airports and $251.5 million on Tobin Bridge, maritime, development, and other capital spending projects from 1981 through 1990.

The Port of Boston serves the six-state New England region and beyond as a natural deep-water berth, and provides access to world ports as well as feeder service several times weekly to Halifax, Canada and the Port of New York. The City's port activity includes handling bulk and general cargo, providing ship repair supply services, offering customs and international trading services, providing storage facilities and other commercial maritime services.

The City's port tonnage fell from the 1950s through the mid 1980s as a result of changes in transportation technology and in the regional economy. In 1990, according to the U.S. Army Corps of Engineers, the Port of Boston ranked as the 21st largest American seaport by total tonnage shipped and as the 18th largest American seaport by foreign tonnage shipped. During fiscal 1992, one million tons of containerized cargo (highest in its recent history) and almost 17 million tons of bulk cargo (commodities and raw materials) worth over $8 billion were shipped through the City's three public and 23 private container terminals.

Logan Airport in 1992 was served by 39 domestic and international airlines. In calendar year 1991 Logan Airport, serving a total of 21.5 million passengers, was the most active airport in New England, the twelfth most active in the United States and the 18th most active in the world, according to the Airports Association Council International (AACI). Total passenger volume at Logan Airport increased by 5.3% annually between fiscal 1979 and fiscal 1988. Between fiscal 1988 and fiscal 1991 Logan Airport's total passenger traffic decreased at a 1.4% average annual rate, due primarily to the national and regional economic recession, events in the Persian Gulf, and overall increases in airline fares. Preliminary results for calendar year 1992 indicate a gain in passenger traffic of 7% (approximately 23 million passengers).

Logan Airport also plays an important role as a center for domestic and international air cargo. According to AACI, in 1991 Logan Airport ranked 14th in the nation in total air cargo volume. Between fiscal 1988 and 1992 the total volume of air cargo handled at the Airport grew by 6.5%.

In 1992, Massport projected that it would spend an average of about $78 million annually during fiscal 1993 through 1997 for on-going capital improvements to Hanscom Field, Logan Airport, Tobin Memorial Bridge and the port facilities, and for improvements and major maintenance at various Massport properties. The Authority expects to finance these projects with a combination of bond proceeds, federal grants, and internally generated funds.

Construction Activity

During the last two decades the public and private sectors carried out a major expansion of capital construction and investment activity. Private commercial development investment has added over 16 million square feet of office space to the physical inventory of the City since 1975, five times the amount built in the previous 35 years.

The following table sets forth the estimated potential construction activity in the City from 1982-1992, estimated as indicated in the notes to the table. It should be noted that the issuance of a building permit and payment of a fee do not necessarily result in construction activity.

During the three-year period of fiscal 1986, fiscal 1987 and fiscal 1988, the estimate of total potential construction activity was $6.3 billion, or an annual average of $2.1 billion. In fiscal years 1989 and 1990, total estimated construction activity dropped by an average of $0.5 billion dollars in each year. In fiscal year 1992, estimated potential construction activity was $1.1 billion.

Boston Building Permit Revenues and Estimated Construction Activity
Fiscal Years 1982-1992

Fiscal Year	Building Permit Revenues (1)	Estimated Potential Construction Activity (2)	Estimated Potential Construction Activity Adjusted For Inflation (3)
1982	$ 3,305,857	$ 388,924,353	$ 645,120,554
1983	$ 5,196,160	$ 611,312,941	$ 948,410,215
1984	$ 5,594,683	$ 658,198,000	$ 975,626,823
1985	$ 7,435,576	$ 874,773,647	$ 1,251,020,377
1986	$13,108,134	$ 1,542,133,412	$ 2,118,442,424
1987	$13,504,134	$ 1,588,721,647	$ 2,066,044,240
1988	$14,431,173	$ 1,697,785,059	$ 2,167,416,702
1989	$11,423,439	$ 1,343,934,000	$ 1,637,115,272
1990	$ 8,119,487	$ 955,233,793	$ 1,083,338,790
1991	$ 6,689,380	$ 786,985,833	$ 846,588,436
1992	$ 9,136,202	$ 1,074,847,236	$ 1,074,847,236
Total	$97,944,224	$11,522,849,921	$14,813,971,069
Annual Average 1982-1992	$ 8,904,020	$ 1,047,531,811	$ 1,346,724,643

(1) Building permit revenues in current dollars.

(2) Potential construction activity estimated by dividing permit revenues by 0.85%, which is the midpoint between permit fees calculated at 0.7% of the first $100,000 estimated value of development cost and 1% for the remainder of development cost.

(3) Estimated potential construction activity adjusted for inflation using CPI-U index from Bureau of Labor Statistics (Base 1982-84=100) to 1992 constant dollars.

Source: City of Boston, Auditing Department and Boston Redevelopment Authority's Policy Development and Research Department.

Large Public Sector Projects

It is anticipated that during the 1990s the Boston metropolitan area will be the site of several major public sector projects. These projects include the depression of the Central Artery, the section of I-93 that runs through downtown Boston, which is the key six-lane elevated interstate highway that carries traffic

through the City, and the construction of a four-lane tunnel under Boston Harbor (together, the "Transportation Projects"). At present, the Central Artery connects with the Sumner and Callahan Tunnels, two two-lane tunnels under Boston, which link downtown Boston with Logan Airport and points north. The Transportation Projects, which are intended to improve traffic flow within the City, are under the control of the Commonwealth. It is estimated that the Transportation Projects will employ about 5,000 on site workers and 10,000 auxiliary workers during the mid-1990s (the peak years of construction). Construction of the Transportation Projects is estimated to cost over $6 billion. Federal funds will cover approximately 90% of this cost, and the Commonwealth will cover the remainder. All of the Federal funding has been authorized but has not been appropriated. It is expected that appropriations will be made annually as the work progresses, although this cannot be guaranteed.

The Massachusetts Water Resources Authority (MWRA), an independent state authority, is constructing one of the largest wastewater treatment facilities in the nation (the "Treatment Facility Project"). This project, which is being undertaken pursuant to a Federal district court order, is scheduled for completion in 1999 as part of MWRA's wastewater treatment program with a total cost of approximately $5.7 billion (1992 dollars). Through fiscal 1992, approximately $1.2 billion of work has been completed. The project is intended to bring wastewater discharges in Boston Harbor in compliance with federal and state requirements. It is being funded through state and federal grants and the issuance by MWRA of revenue bonds backed by rates and charges paid by users. Such rates and charges are expected to continue to increase significantly each year, dictated in large part by increased debt service costs in connection with financing the court ordered portions of the capital program, and are expected to have a substantial financial impact on the local bodies served by MWRA, including the Boston Water and Sewer Commission ("BWSC").

The City is not directly responsible for the costs of any of these projects, although the BWSC, as a major user of water and sewer systems, is expected to bear some cost of the Treatment Facility Project indirectly through increased user fees. See "City Indebtedness-Related Authorities and Agencies-Boston Water and Sewer Commission." It is currently negotiating with the Commonwealth to receive mitigation payments for any City services (such as fire and police) which may be required to support the Transportation Projects. No such services are expected to be required for the Treatment Facility Project.

Office Market and New Development

The City currently has 49 million square feet of office space, of which 37 million is Class A (the most expensive category), and 12 million is Class B or C. From 1977 through 1983 local office occupancy surveys reported a consistent decline in vacancy rates, reaching 2.0% in 1983. With the addition of over three million square feet of office space in 1984, the vacancy rate rose to 11.5% by the end of that year. However, net absorption of over two million square feet was the highest in a decade. In 1986 and 1987 demand of over two million square feet annually outpaced office completions, sending vacancy rates down to 5.2% by the end of 1987. During 1988, completion of over three million square feet of new and renovated Class A office space and a decline in absorption to 1.0 million square feet brought the vacancy rate for such space up to 12.0%. (Figures for 1988 and later reflect Class A space only.) In 1989, office market absorption of 796,000 square feet, and the addition of about 718,000 square feet, reduced vacancy rates to 11.5%. Vacancy rates at year-end 1990 were 14.6% with an annual absorption rate of 583,000 square feet, when 1.9 million square feet of new office space was added.

New office construction added during 1991 totalled 905,513 square feet of office space in two buildings. The total amount of space absorbed in 1991 was a negative 163,381 square feet, driving the vacancy rate upwards. At year end 1991, the downtown Boston office vacancy rate had risen to 17.1%, according to the BRA. As of the end of the second quarter of 1992, the BRA reported that the vacancy rate had come down to 16.6% as 482,000 square feet were absorbed. Only one new building, International Place Phase 2, is expected to be completed in 1993 bringing 750,000 square feet of new office space into the downtown market. No new office buildings are expected over the following two to three years. Even though Boston's downtown market vacancy rate is high compared to 1980s levels, it remains below the national average, as determined by Coldwell Banker, a real estate brokerage corporation, in the following chart.

Comparative Office Vacancy Rates
20 Largest Downtown Office Markets as of December 31, 1991
(Ranked by Size of Downtown Market)

Office Market Size	City	Vacancy Rate	Office Market Size	City	Vacancy Rate
1	Manhattan, Midtown	14.9%	11	Minneapolis-St. Paul	17.5
2	Chicago	15.8	12	Denver	20.4
3	Manhattan, Downtown	20.3	13	Cleveland	23.2
4	Boston	17.7	14	Phoenix	25.7
5	Philadelphia	14.1	15	Cincinnati	17.7
6	San Francisco	10.8	16	Atlanta	17.0
7	Houston	17.6	17	Portland, Ore.	16.9
8	Los Angeles	19.2	18	Kansas City	24.8
9	Dallas	23.6	19	St. Louis	23.1
10	Seattle	14.0	20	Detroit	13.8

National Average(1) 18.1%

(1) National Average is based on 48 U.S. cities from the Coldwell Banker Commercial Office Vacancy Index.
Source: Coldwell Banker Commercial Office Vacancy Index, December 31, 1991.

Retail Market

The City is within the ninth largest metropolitan retail market in the nation as of 1990, consisting of the City plus the Massachusetts municipalities of Lowell, Lawrence, Salem and Brockton. Of the approximately 10 million square feet of retail space in the City, approximately six million square feet are located in downtown Boston and Back Bay. Approximately 3,800 retail stores are located in the City. According to the U.S. Census of Retail Trade, retail sales in the Boston metropolitan area decreased by 1.6% to $33,490 billion in 1990 from the 1989 level. During 1991, retail sales in the Boston metropolitan area were below those of 1990. The first ten months of 1992 compared to the same period in 1991 show a rise of 2.1%, compared with a national rise of 4.2% for the same period.

Metropolitan Boston Retail Sales, 1987-1992
(In millions, not adjusted for inflation)

	1987	1988	1989	1990	1991	1992
January	$ 2,094	$ 2,387	$ 2,456	$ 2,490	$ 2,317	$2,178
February	2,178	2,434	2,409	2,411	2,378	2,240
March	2,383	2,739	2,784	2,797	2,226	2,424
April	2,441	2,682	2,746	2,698	2,186	2,431
May	2,669	2,857	3,043	2,949	2,440	2,577
June	2,723	2,911	2,918	2,893	2,460	2,593
July	2,551	2,643	2,625	2,657	2,314	2,450
August	2,612	2,734	2,918	2,870	2,426	2,423
September	2,705	2,828	2,847	2,792	2,582	2,511
October	2,663	2,762	2,777	2,740	2,419	2,681
November	2,740	2,893	3,001	2,948	2,537	NA
December	3,295	3,486	3,522	3,245	2,939	NA
Annual	31,054	33,356	34,046	33,490	29,224	NA

* Preliminary.

Source: U.S. Department of Commerce, Bureau of the Census, "Current Business Reports: Monthly Retail Trade". Compiled by Boston Redevelopment Authority's Policy Development and Research Department. Data are for the five counties in metropolitan Boston: Essex, Middlesex, Norfolk, Plymouth and Suffolk.

One large retail development, a major rebuilding of the retail mall at Prudential Center, is under construction. When completed, it will add over 300,000 square feet to the market.

Industrial Market and Recent Developments

As of June, 1992, according to the Economic Development and Industrial Corporation of Boston (EDIC), over 20 million square feet of industrial space was located in the City. The vacancy rate was 42%, with over eight million square feet unoccupied. The average rent for quality industrial space was estimated to be approximately $4.71 per square foot. In addition, there were 3 million square feet of industrial research and development space in the City, which was 25% vacant with 746,000 square feet available. The average rent was estimated to be $10.81 per square foot.

According to information from EDIC, five million square feet were acquired and/or rehabilitated in the City for industrial use from 1983 through 1989. Among these projects were the multi-million dollar expansions by Teradyne, Inc. and H.P. Hood Inc., EDIC's Industrial Center at the former Boston Army Base and the Marine Industrial Park, renovation of the former Schrafft's factory in Charlestown for high-technology industry, and private investments in rehabilitation for industrial use of the Stonybrook Commerce Center and the Haffenreffer Brewery in Jamaica Plain and the Howden Sirocco plant in Hyde Park.

During 1990 and 1991, significant developments included Groupe Bull's investment of $17 million in the City; its decision to consolidate its North American manufacturing resulted in the addition of a shift at its Brighton plant. A Cambridge-based biotechnology firm, Genzyme Corporation, started construction in 1992 of an $85 million biopharmaceutical manufacturing plant in Allston. Genzyme plans to build further manufacturing, research and development, and headquarters facilities on the site during the 1990s.

Certain companies have been forced to lay off employees as a result of recent economic conditions in the City. For example, in December 1992, Digital Equipment Corporation (DEC) and Stride Rite Corporation each announced their intent to close their current plants in Roxbury. These plant closings will eliminate a total of 350 manufacturing jobs, representing about one percent of the City's industrial jobs. It is possible that Stride Rite may build a new distribution facility elsewhere in the City but the company is also considering other sites outside of the City. The City's administration is actively working to ease the impact of these losses and find replacement companies for the plant facilities left behind.

Housing Stock, Housing Values, and the Linkage Program

In April 1990, the City's housing stock consisted of 250,863 units. From 1980 through 1990, over 9,400 net new housing units were added to the supply. The composition of housing is changing. The number of private rental apartments declined between 1980 and 1990, mainly due to condominium conversions. Condominium units increased from about 4,500 in 1980 to over 33,000 in 1990 or 13% of the housing stock. Units in 1-4 family homes increased between 1980 and 1990, and now constitute over 50% of the City's housing stock. More than 80% of these structures are owner-occupied. Despite the loss of rental units since 1980, over 5,000 net new units have been added to publicly-assisted housing. In 1990, public and publicly-assisted housing constituted 17% of the City's housing stock.

Within the City, the U.S. Census reported that the median sales value of a single family home was $161,400 in 1990. The U.S. Census also reported that the median contract rent in the City was $546 per month in 1990, when market rate units and subsidized units were combined. The City's gross housing vacancy rate in 1990 was 9%, with an estimated 6% net vacancy rate (representing units readily available for occupancy).

One large retail development, a major remodeling of the retail mall at Prudential Center, is under construction. When completed, it will add over 100,000 square feet to the market.

Industrial Market and Recent Developments

As of June, 1992, according to the Economic Development and Industrial Corporation of Boston (EDIC), over 20 million square feet of industrial space was located in the City. The vacancy rate was 42%, with over eight million square feet unoccupied. The average rent for quality industrial space was estimated to be approximately $4.75 per square foot. In addition, there were 3 million square feet of industrial research and development space in the City which was 25% vacant, with 740,000 square feet available. The average rent was estimated to be $10.83 per square foot.

According to information from EDIC, five million square feet were renovated and/or rehabilitated in the City for industrial use from 1983 through 1989. Among these projects were the multimillion dollar expansions by Teradyne, Inc. and M.F. Roach Inc., EDIC's Industrial Center at the former Boston Army Base and the Marine Industrial Park, renovation of the former Schraft's factory in Charlestown for high-technology industry, and private environmental rehabilitation for industrial use of the [illegible] Commerce Center and the [illegible] Brewery in Jamaica Plain and the Boston [illegible] plant in Hyde Park.

During 1990 and 1991, significant developments included [illegible] investment of $17 million in the City, its decision to consolidate its North American manufacturing operations in the addition of a shell at its Brighton plant. A Cambridge-based biotechnology firm, Genzyme Corporation, started construction in 1992 of an $85 million biopharmaceutical manufacturing plant in Allston. Genzyme plans to build further manufacturing, research and development, and headquarters facilities on the site during the 1990s.

Certain companies have been forced to lay off employees as a result of recent economic conditions in the City. For example, in December 1992, Digital Equipment Corporation (DEC) and Stride Rite Corporation each announced they would to close their current plants in Roxbury. These plant closings will eliminate a total of 950 manufacturing jobs, representing about one percent of the City's industrial jobs. It is possible that Stride Rite may build a new distribution facility elsewhere in the City but the company is also considering other sites outside of the City. The City's administration is actively working to ease the impact of these losses and find replacement companies for the plant facilities left behind.

Housing Stock, Housing Values and the Linkage Program

In April 1990, the City's housing stock consisted of 250,863 units. From 1980 through 1990, over 8,600 net new housing units were added to the supply. The composition of housing is changing. The number of private rental apartments declined between 1980 and 1990, mainly due to condominium conversions. Condominium units increased from about 4,500 in 1980 to over 33,000 in 1990 or 13% of the housing stock. Units in 1-4 family homes increased between 1980 and 1990, and now constitute over 50% of the City's housing stock. More than 40% of these structures are owner-occupied. Despite the loss of rental units since 1980, over 5,000 net new units have been added to publicly assisted housing. In 1990, public and publicly-assisted housing constituted 19% of the City's housing stock.

Within the City, the U.S. Census reported that the median sales value of a single family home was $161,400 in 1990. The U.S. Census also reported that the median contract rent in the City was $546 per month in 1990, when market rate units and subsidized units were combined. The City's gross housing vacancy rate in 1990 was 9%, with an estimated 6% net vacancy rate (representing units readily available for occupancy).

Greater Boston Annual Median Housing Prices

Year	Housing Prices	Percent of Change
1980	$ 71,700	—
1981	$ 73,900	3.1%
1982	$ 80,200	8.5
1983	$ 82,600	3.0
1984	$100,000	21.1
1985	$134,200	34.2
1986	$159,200	18.6
1987	$177,200	11.3
1988	$181,200	2.3
1989	$181,900	0.4
1990	$174,100	(4.3)
1991	$170,100	(2.3)
1992	$172,400*	1.3

* 1992 is an average of the first three quarters' sales prices.
Source: National Association of Realtors and the Greater Boston Real Estate Board.

The National Association of Realtors reported that the median sale value of homes in the Boston metropolitan area was $181,900 for 1989; $174,100 for 1990 and $170,100 for 1991. The average for the first three quarters of 1992 was $172,400, which is a 1.3% increase from 1991 prices but a 5.2% decline from peak prices in 1989. Banker & Tradesman, a local trade journal, recently reported that during the first nine months of 1992, there were 23.5% more single family home sales in the City than there were in the same period of 1991 (378 versus 306), while condominium sales increased by 7.1% over the same period (1,564 versus 1,460).

The City implemented its development linkage program in December, 1983, in order to direct some of the benefits of downtown investment to the building of affordable housing in its neighborhoods. Under the program, real estate developers seeking approval of large scale commercial or institutional developments are required to enter into agreements obligating them to make "linkage payments" to the Neighborhood Housing Trust in a aggregate amount of $6 per square foot of construction over 100,000 square feet, of which $1 per square foot goes to a job training fund and $5 per square foot goes for housing purposes. These linkage payments are amortized over a period of either seven or twelve years, depending on the date of the initial agreement. Current agreements provide for a seven-year payment period. The seven-member Neighborhood Housing Trust holds public hearings and, together with the Boston Redevelopment Authority, approves linkage grants to selected projects. As of December 31, 1991 developers of 43 projects completed or in construction were committed to pay $55.3 million under this program. $33.7 million of this money already has been allocated for the construction or renovation of 3,560 housing units in the City's neighborhoods. Affordable housing units for low and moderate-income residents comprise 77% of this total.